SGC

MAR 12 1992

Dennis K. Killian

Department of Water and Power the City of Los Angeles

March 10, 1992

Mr. S. Gale Chapman
President and Chief Operations Officer
Intermountain Power Service Corporation
850 West Brush Wellman Road
Delta, Utah 84624-9546

3/13/92

Dear Mr. Chapman:

cc'd on letter

01.01.03
IGS91-3

Additions and Betterments
IPSC Project File No. 91-3
Boiler Burner Modifications and
Replacements on Units 1 and 2
Intermountain Generating Station (IGS)

As a result of our meeting on February 19, 1992 concerning IGS boiler burner modifications, IPSC is requested to perform the following tasks:

1. Inspect the Unit 2 boiler during the outage scheduled to begin on March 30, 1992 to determine the integrity of the burner stabilizers or any effects the burner stabilizers have had on the boiler. The inspection should be performed before stabilizers are installed on the new burners for Unit 1. Please ensure that Messrs. James E. Allen and Larry W. Jones from my staff and Raffi K. Krikorian from the Mechanical Engineering Section are present during the Unit 2 inspection.

2. Provide all test data and analyses showing the before and after operating conditions related to the installation of the burner stabilizers on Unit 2.

3. Perform NOx testing on Unit 2 to determine any changes in NOx emissions since the stabilizers have been added to the burners. This testing should be done and the data analyzed before the Unit 1 scheduled outage begins on April 13, 1992.

4. Baseline NOx data is absolutely required to be recorded on Unit 1 before the scheduled outage. This data will be compared to NOx data obtained after the Unit 1 outage at the same operating conditions.

111 North Hope Street, Los Angeles, California ☐ *Mailing address:* Box 111, Los Angeles 90051-0100
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If inspection or data on Unit 2 shows any severe problems caused by the stabilizers, then the stabilizers will not be authorized to be installed on the burners for Unit 1. Also, if NOx testing shows that emissions have increased on Unit 2, the stabilizers should not be installed on the burners for Unit 1.

Even if stabilizers are not installed on the Unit 1 burners, the plans for the April outage should include adding shrouding, balancing the air flow, and balancing the fuel flows. Please coordinate with the Department's Site Construction Management Group and the Mechanical Engineering Section to ensure these activities occur.

Please provide any further testing and NOx test data to me with copies to Mr. Douglas W. Fowler from the Mechanical Engineering Section and our Mr. Byron H. Fujikawa.

Enclosed for your information are the minutes of the February 19, 1992 meeting.

If you have any questions, please have your staff contact Mr. Fujikawa at (213) 481-8740 or Mr. Irwin Stein at (213) 481-6258.

Sincerely,

Bruce E Blowey/gd

BRUCE E. BLOWEY
Assistant Engineer in Charge
of Operation and Maintenance

Enclosure

c: Messrs. Dennis K. Killian, IPSC
Gerald K. Hintze, IPSC
Raffi K. Krikorian
Douglas W. Fowler
James E. Allen
Larry W. Jones
Byron H. Fujikawa
Irwin Stein

MINUTES TO BOILER BURNER MODIFICATION MEETING
HELD ON FEBRUARY 19, 1992

Attendees:

Gale Chapman	- IPSC	Raffi Krikorian	- DWP
Dennis Killian	- IPSC	Charles DeVore	- DWP
Jerry Hintze	- IPSC	Jim Allen	- DWP
Aaron Nissen	- IPSC	Byron Fujikawa	- DWP
Cecil James	- IPSC	Tom Hatton	- DWP
Bruce Blowey	- DWP	Irwin Stein	- DWP
Doug Fowler	- DWP		

A meeting was held at the GOB to discuss burner modifications to the Intermountain Generating Station (IGS) boilers. The main purpose of the meeting was to determine if test results from the Unit 2 boiler could be used to support the installation of stabilizers on the new burners for Unit 1's boiler.

Jerry Hintze gave a brief history on the burners and their modifications. Because the boiler was not able to pass the first ASME boiler test, B&W requested IPSC to operate the out-of-service burners at 1350 degrees F. At this higher temperature, the boiler was able to pass the next ASME test. However, operating at 1350 degrees F. resulted in severe damage to the burners.

B&W was never able to provide IPSC with the technical expertise to prevent the continued damage to the burners. IPSC then brought in several consultants, including RJM, to help them resolve the burner problems. IPSC felt RJM understood what was happening to their burners. IPSC believes RJM provided them with the expertise needed to resolve the burner problems. Based on RJM's advice, Unit 2's burners were modified. Coal and air balancing were conducted, and shrouding and stabilizers were installed on the Unit 2 burners during the November 1991 outage.

Air balancing test data on Unit 2 were handed out by Jerry showing before and after results. The after results indicated IPSC's adjustments did help balance the burners. Jerry also stated additional adjustments have been made to the air registers during the operation of Unit 2.

Cecil James described how RJM's finite element analysis helped B&W design a burner to withstand thermal stresses more effectively. Initially, B&W was only planning to beef up the old burner design using 800H material. He also stated the finite analysis helped reduce the cost of the new burners for Unit 1 by over $800k. MES, however, stated the savings were only around $300k. Cecil also said RJM's analysis correlated very closely with the type of damage he was seeing in the boilers.

Aaron Nissen discussed test results obtained on Unit 2 since its burner modifications. He handed out NOx and temperature data from Unit 2 testing. The NOx data compared Unit 1's emissions to Unit 2's emissions. However, the results of the test were inconclusive. The temperature data do indicate that overall temperatures of the burners have decreased. According to Aaron, because of the modifications, the burner flames have been pushed out further from the coal nozzles and the flame profiles have improved. Also, there is some indication that the eyebrow size has decreased since the outage. He also said a graph developed by RJM showed there would be an overheating problem with the new burners for Unit 1 unless stabilizers are added. IPSC concluded if stabilizers are not added to the Unit 1 burner, the new burners would deteriorate in a manner similar to the old burners. Also, there would be an additional cost for putting on the stabilizers a year later. IPSC also stated RJM made some modifications to the stabilizer design for the Unit 1 burners.

Doug Fowler stated the NOx data on Unit 2 shows the NOx emissions have gone up since the outage. He also said Operating has to decide if stabilizers are to be added to the new burners during the Unit 1 outage.

Byron Fujikawa stated that the overall temperature data was not conclusive. Individual burner temperature data showed both higher and lower temperatures after the modification. Byron also asked if there were any burner line fires in Unit 2 since the stabilizers have been added. IPSC said there had been fires but they were not related to flue gases recirculating back into the burner.

Jim Allen stated balancing the air flow is the most important aspect for ensuring the new burners are successful.

Irwin Stein stated an inspection should be done on the Unit 2 furnace to ensure there are no negative results from the stabilizers.

Bruce Blowey stated that he wants IPSC to do additional NOx testing on Unit 2. He wants to make sure that NOx levels on Unit 2 have not increased since the stabilizers have been added. He also wants Unit 2 to be inspected before the stabilizers are added to the Unit 1 burners. He said the new stabilizers can be ordered and, if there were no negative results from the Unit 2 inspection and NOx testing, the stabilizers could be installed. Bruce also stated he wants IPSC to perform baseline NOx testing on Unit 1 before the new burners are installed. He then wants the baseline Nox values to be compared to NOx test data recorded after the burners have been installed.

Charles DeVore said he would sign the paperwork to proceed with the purchase and installation of the stabilizers.

IS:hl
3-9-92